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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/078,348	02/21/2002	Chang-Hum Lee	P56620	6091
7590	03/14/2005		EXAMINER	
Robert E. Bushnell Suite 300 1522 K Street, N.W. Washington, DC 20005			WARD, AARON S	
			ART UNIT	PAPER NUMBER
			2675	

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/078,348

Applicant(s)

LEE, CHANG-HUM

Examiner

Aaron S. Ward

Art Unit

2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-4 and 13-20 is/are allowed.
- 6) ☒ Claim(s) 5-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claims 1, 2, 5, 8, 10, 13 and 15 are amended, and claims 1-20 are pending.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata (JP06-034946, already of record), in view of Lee (U.S. Patent No. 5,818,172, already of record), in view of Koenck et al. (U.S. Patent No. 5,818,553, already of record).

As to claim 5, Shibata teaches a method for providing backlight brightness control based on a contrast sensing part (automatic modulated light circuit; constitution of Abstract and paragraphs 0011-0014 teaching the automatic modulated light circuit receives color tone data as a source signal and forms a low- or high-brightness back light control signal according to the screen image brightness) for sensing contrast of a video signal displayed on an LCD panel making a computer screen easy to see while reducing power consumption (constitution). The contrast sensing part controls the brightness/darkness of the backlight (paragraph 0016).

Although Shibata teaches a contrast sensing/controlling system including an automatic modulated light circuit wherein an inverter drives the back light according to a contrast sensor, Shibata does not specifically teach that the contrast sensing part is connected to the LCD panel,

Art Unit: 2675

or that the method of controlling the backlight according to the contrast sensor specifically includes sensing an operating voltage of a DC/AC inverter, obtaining a contrast sensing part control signal, converting the backlight control signal by a DC converter, controlling the DC signal for the inverter by a voltage controller, or supplying the controlled DC signal by a controller as a DC operating voltage.

Connecting the contrast sensing part to the LCD panel is known in the display art, as evidenced by Koenck et al. (Fig. 3 illustrating contrast sensor 24 connected to the LCD 26, 28, 30, 34; col. 2 lines 36-54).

It would have been obvious to one of ordinary skill in the art at the time of the invention to connect the contrast sensing part to the LCD panel as Koenck et al. teaches, in the contrast control system of Shibata, because the references are directed to contrast control of backlit LCDs and connecting the sensor as taught by Koenck provides a convenient location for receiving contrast information.

Lee teaches a sensor-based back light controlling circuit for an LCD 14 (Fig. 3) of a portable computer, including a direct current to alternating current (DC/AC) inverter 3 supplying an AC voltage to the back light 4, sensing by controller 6 an operating voltage of DC/AC inverter 3 supplying back light AC voltage, obtaining a back light control signal output from sensing part 10, converting a back light control signal into a DC signal by DC converter 2, controlling the DC signal by voltage controller 7 to have an intensity for operating the DC/AC inverter 3, and supplying by DC converter 2 the controlled DC signal as a DC operating voltage to the DC/AC inverter 3.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the sensor-based back light controlling circuit for an LCD as Lee teaches, in the contrast control system of the combined teaching of Shibata and Koenck et al., because the references are directed to backlight control, and the sensor-based back light controlling circuit taught by Lee provides several degrees of brightness (col. 2 lines 14-16) based on a sensor as needed by Shibata, which teaches that the backlights are controlled for several degrees of brightness based on a sensor which is a contrast sensor.

As to claim 12, Shibata teaches (paragraph 0011) that the contrast sensing part senses contrast of an LCD video signal.

3. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibata, Koenck et al. and Lee as applied to claim 5 above, and further in view of Helms (U.S. Patent No. 5,952,992, already of record).

As to claims 6-11, the combined teaching of Shibata, Koenck et al. and Lee teaches the method as claimed in claim 5, but does not teach manual back light selection or suspending automatic back light control.

Helms teaches an intelligent LCD brightness control system wherein "user-selection of a different brightness level, either higher or lower, will override the automatic brightness control setting" (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include manual back light user-selection and automatic override for suspending automatic back light control as Helms teaches, in the system of the combined teaching of Shibata, Koenck

et al. and Lee, because the references are directed to controlling LCD brightness and manually controlling the brightness as taught by Helms provides user-customization and control for improved end-user experience.

Allowable Subject Matter

4. Claims 1-4 and 13-20 are allowed.

Response to Arguments

5. Applicant's arguments filed July 19, 2004 regarding claims 5-12 have been fully considered but they are not persuasive. Regarding the allegation that Shibata does not teach or suggest a contrast sensing part, Shibata teaches in the Abstract and paragraphs 0011-0014 that the automatic modulated light circuit receives color tone data as a source signal and forms a low- or high-brightness back light control signal according to the screen image brightness, thus sensing contrast of a video signal displayed on an LCD panel making a computer screen easy to see while reducing power consumption (constitution). The contrast sensing part controls the brightness/darkness of the backlight (paragraph 0016). Regarding the allegation that the Shibata circuit differs from the claimed contrast sensing part due to the claimed sensing part sensing various partial sections, when most of the section in the frame of the monitor is white, or operation according to saturation of color and area ratio in the frame of the monitor, it is noted that these characteristics are not recited in the rejected claims. Regarding the arguments pertaining to the converter for converting a PWM signal, it is noted that this feature is not recited in claims 5-12.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Yamamoto et al., U.S. Publication No. 2001/0008395 A1, is directed to sensing contrast of a display and adjusting the light accordingly.

Fagard, U.S. Patent No. 5,162,785, is directed to adjusting a display panel based on contrast.

Aoki et al., U.S. Patent No. 4,760,389, is directed to adjusting a display based on detected light.

Eaton et al., U.S. Patent No. 5,157,525, is directed to controlling an LCD display based on contrast.

Ike, U.S. Patent No. 5,153,756, is directed to automatically controlling the LCD display contrast.

Ichise, U.S. Patent No. 5,786,801, is directed to controlling the backlight of a display based on a sensor feedback.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2675

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron S. Ward whose telephone number is (703) 305-8992. The examiner can normally be reached on Monday - Friday, 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Lefkowitz can be reached on (703) 306-0403. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASW


SUMATI LEFKOWITZ
PRIMARY EXAMINER